

## CLAIMS

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is as follows:

- 1 1. A digital filter for applying one of a  
2 plurality of correction factors to first digital  
3 data in accordance with a difference in value  
4 between said first digital data and second digital  
5 data, said filter comprising  
6 means for determining an increase in value of a  
7 correction value according to said difference within  
8 a range above a threshold, and  
9 means for summing said increase in value of  
10 said correction value with a maximum increase in  
11 said correction value for each lower range of  
12 difference values.
- 1 2. A digital filter as recited in claim 1, wherein  
2 said rang and said lower ranges are defined by  
3 threshold difference values.
- 1 3. A digital filter as recited in claim 1, wherein  
2 said first and second digital data are image  
3 luminance values.
- 1 4. A digital filter as recited in claim 3, wherein  
2 said image luminance values are luminance values of  
3 adjacent pixels in a direction orthogonal to a  
4 raster line.

1 5. A digital filter as recited in claim 1, wherein  
2 said second digital data is truncated by a least  
3 significant bit.

1 6. A digital filter as recited in claim 1, wherein  
2 a range of possible values of said first and second  
3 data is clipped, providing disallowed values of said  
4 first and second digital data.

1 7. A digital filter as recited in claim 6, wherein  
2 said second digital data is truncated by at least  
3 one least significant bit.

1 8. A digital filter as recited in claim 6, further  
2 including  
3 means for storing said first digital data and  
4 accessing values thereof as said second digital  
5 data.

1 9. A digital filter as recited in claim 8, further  
2 including  
3 means for compressing said first digital data  
4 by encoding a run length of sequential identical  
5 values in accordance with said disallowed values.

1 10. A digital filter as recited in claim 7, further  
2 including  
3 means for storing said first digital data and  
4 accessing values thereof as said second digital  
5 data.

1 11. A digital filter as recited in claim 10,  
2 further including  
3 means for compressing said first digital data  
4 by encoding a run length of sequential identical  
5 values in said at least one bit truncated from said  
6 second digital data.

1 12. A digital filter as recited in claim 11,  
2 further including  
3 means for compressing said first digital data  
4 by encoding a run length of sequential identical  
5 values in accordance with said disallowed values.

1 13. A digital filter as recited in claim 12,  
2 wherein one of said disallowed values in a flag  
3 indicating compression in accordance with another of  
4 said disallowed values.

1 14. A digital filter as recited in claim 4, wherein  
2 said first digital data represents one of a  
3 plurality of image planes and further includes at  
4 least one said correction factor associated with a  
5 region of an image in said image plane.

1 15. A data processor including  
2 means for clipping respective digital values to  
3 provide disallowed values of digital data,  
4 means for truncating said digital values by at  
5 least one least significant bit forming truncated  
6 digital values, and  
7 means for compressing said digital values by  
8 encoding a run length of sequential identical  
9 truncated digital values with said disallowed values  
10 of said digital data and at least one bit replacing  
11 said at least one least significant bit.

1 16. A data processor as recited in claim 15,  
2 wherein at least one said disallowed value is a flag  
3 indicating encoding of a run length as another  
4 disallowed value.

1 17. A method of processing digital data including  
2 steps of  
3 truncating at least one least significant bit  
4 of said clipped digital signal values forming  
5 truncated digital signal values, and  
6 filtering respective values of said digital  
7 data with corresponding ones of said truncated  
8 digital signal values.

1 18. A method as recited in claim 17, wherein said  
2 filtering step is performed with each of two of said  
3 truncated digital signal values.

1 19. A method as recited in claim 18, including the  
 2 further steps of  
 3 clipping digital signal values to a range  
 4 forming clipped digital signal values and disallowed  
 5 values, and  
 6 compressing said truncated digital signal  
 7 values in accordance with run length codes using  
 8 said disallowed values and said at least one least  
 9 significant bit.

1 20. A method as recited in claim 18, including the  
 2 further step of deriving one of said two signal  
 3 values by storing another of said truncated digital  
 4 signal values in a buffer for the duration of a scan  
 5 line.

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 1 18. A method as recited in claim 17, including the  
 2 further step of  
 3 storing said truncated digital signal values in  
 4 a form encoded with said disallowed values.

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 1 19. A method as recited in claim 17, wherein said  
 2 filtering step includes  
 3 summing an increase in value of a correction  
 4 factor in a range of difference values between a  
 5 value of said digital data and a corresponding  
 6 truncated digital signal value with a maximum  
 7 increase in said correction value for each lower  
 8 range of difference values.

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 1 20. A method as recited in claim 18, wherein said

2 filtering step includes  
3 summing an increase in value of a correction  
4 factor in a range of difference values between a  
5 value of said digital data and a corresponding  
6 truncated digital signal value with a maximum  
7 increase in said correction value for each lower  
8 range of difference values.